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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,466	09/23/2003	Bjoern Heismann	32860-000608/US	9040

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EXAMINER	
POLYZOS, FAYE S	
ART UNIT	**PAPER NUMBER**
2878	

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/667,466	HEISMANN ET AL.	
	Examiner	Art Unit	
	Faye Polyzos	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 6-9, 11-12, 14-15 and 17-30 are rejected under 35 U.S.C. 102(b) as being anticipated by *Stettner et al (US 5,099,128 A).*

Regarding claim 1, *Stettner* discloses an image detector for detecting electromagnetic radiation comprising: a carrier layer (45); a photosensor (13)(16) carried by the carrier layer, wherein each of the carrier layer and photosensor include a nonvanishing transparency (15) to the electromagnetic radiation and wherein at least two carrier layers and corresponding photosensors are arranged one above the other, such that the electromagnetic radiation is passable through them one after the other (See Generally Figs. 3(a)-3(b) and 4(a)-4(c) and col. 1, lines 51-57, col. 3, lines 55-66).

Regarding claim 2, *Stettner* discloses each carrier layer carries a plurality of photosensors arranged spatially on a respective carrier layer wherein the plurality of photosensors are adapted to generate electrical signals in a manner dependent on the detection of electromagnetic radiation, and wherein the plurality of photosensors are jointly electrically contact-connected at least one of individual and within individual areas, so that the electromagnetic radiation is adapted to be detected in spatially

resolved fashion (See Generally Figs. 4a-4c and col. 4, lines 3-18 and col. 5, lines 3-12).

Regarding claim 3, *Stettner* discloses at least one of individual photosensors and photosensor areas of each carrier layer are arranged at least one of congruently and in overlapping fashion at least one of above and below the at least one of individual photosensors and photosensor areas of the each carrier layer (See Generally Figs. 3(a)-3(b) and 4(a)-4(c) and col. 1, lines 51-57, col. 3, lines 55-66).

Regarding claim 4, *Stettner* discloses at least one of individual photosensors and photosensor areas of each carrier layer are arranged randomly, so that the at least one of photosensors and photosensor areas which are arranged randomly at least one of above and below the at least one of photosensors and photosensor areas of other carrier layers are jointly utilizable for the spatially resolved detection of radiation to be detected (See Generally Figs. 3(a)-3(b) and 4(a)-4(c) and col. 1, lines 51-64).

Regarding claim 6, *Stettner* discloses at least one luminescent material layer including a nonvanishing transparency to the electromagnetic radiation (col. 3, lines 61-64), wherein the at least one luminescent material layer is adapted to output a radiation of changed wavelength upon being excited by the electromagnetic radiation, the radiation of changed wavelength being detectable by the photosensors (col. 4, lines 60-68).

Regarding claim 7, *Stettner* discloses at least one of the luminescent material layer and the carrier layer form a common electrical contact for adjoining photosensors (See Generally Figs. 3(a)-3(b) and 4(a)-4(c) and col. 3, lines 55-66).

Regarding claim 8, *Stettner* discloses wherein at least one of the layer thicknesses and layer materials of the individual planes of photosensors are varied in such a way that all the planes of photosensors are adapted to generate detection signals of approximately identical magnitude if the electromagnetic radiation passes through them one after the other (See Generally Figs. 3(a)-3(b) and 4(a)-4(c) and col. 3, lines 67-68 and col. 4, lines 1-2 and 19-28).

Regarding claim 9, *Stettner* discloses the layer thickness of the photosensors increase in the order in which the electromagnetic radiation is adapted to pass through them (col. 1, lines 51-57 and col. 4, lines 19-27).

Regarding claim 11, *Stettner* discloses at least one luminescent material layer including a nonvanishing transparency to the electromagnetic radiation (col. 3, lines 61-64), wherein the at least one luminescent material layer is adapted to output a radiation of changed wavelength upon being excited by the electromagnetic radiation, the radiation of changed wavelength being detectable by the photosensors (col. 4, lines 60-68).

Regarding claim 12, *Stettner* discloses at least one of the luminescent material layer and the carrier layer form a common electrical contact for adjoining photosensors (See Generally Figs. 3(a)-3(b) and 4(a)-4(c) and col. 3, lines 55-66).

Regarding claim 14, *Stettner* discloses at least one luminescent material layer including a nonvanishing transparency to the electromagnetic radiation (col. 3, lines 61-64), wherein the at least one luminescent material layer is adapted to output a radiation of changed wavelength upon being excited by the electromagnetic radiation, the

radiation of changed wavelength being detectable by the photosensors (col. 4, lines 60-68).

Regarding claim 15, *Stettner* discloses at least one of the luminescent material layer and the carrier layer form a common electrical contact for adjoining photosensors (See Generally Figs. 3(a)-3(b) and 4(a)-4(c) and col. 3, lines 55-66).

Regarding claim 17, *Stettner* discloses at least one luminescent material layer including a nonvanishing transparency to the electromagnetic radiation (col. 3, lines 61-64), wherein the at least one luminescent material layer is adapted to output a radiation of changed wavelength upon being excited by the electromagnetic radiation, the radiation of changed wavelength being detectable by the photosensors (col. 4, lines 60-68).

Regarding claim 18, *Stettner* discloses at least one of the luminescent material layer and the carrier layer form a common electrical contact for adjoining photosensors (See Generally Figs. 3(a)-3(b) and 4(a)-4(c) and col. 3, lines 55-66).

Regarding claim 19, *Stettner* discloses at least one of the layer thicknesses and layer materials of the individual planes of photosensors are varied in such a way that all the planes of photosensors are adapted to generate detection signals of approximately identical magnitude if the electromagnetic radiation passes through them one after the other (See Generally Figs. 3(a)-3(b) and 4(a)-4(c) and col. 4, lines 19-34).

Regarding claim 20, *Stettner* discloses the layer thickness of the photosensors increase in the order in which the electromagnetic radiation is adapted to pass through them (col. 1, lines 51-57 and col. 4, lines 19-27).

Regarding claim 21, *Stettner* discloses at least one of the layer thicknesses and layer materials of the individual planes of photosensors are varied in such a way that all the planes of photosensors are adapted to generate detection signals of approximately identical magnitude if the electromagnetic radiation passes through them one after the other (See Generally Figs. 3(a)-3(b) and 4(a)-4(c) and col. 4, lines 19-34).

Regarding claim 22, *Stettner* discloses the layer thickness of the photosensors increase in the order in which the electromagnetic radiation is adapted to pass through them (col. 1, lines 51-57 and col. 4, lines 19-27).

Regarding claim 23, *Stettner* discloses at least one of the layer thicknesses and layer materials of the individual planes of photosensors are varied in such a way that all the planes of photosensors are adapted to generate detection signals of approximately identical magnitude if the electromagnetic radiation passes through them one after the other (See Generally Figs. 3(a)-3(b) and 4(a)-4(c) and col. 4, lines 19-34).

Regarding claim 24, *Stettner* discloses the layer thickness of the photosensors increases in the other in which the electromagnetic radiation is adapted to pass through them (col. 1, lines 51-57 and col. 4, lines 19-27).

Regarding claim 25, *Stettner* discloses the image detector is for detecting X-ray radiation (col. 9, lines 44-50).

Regarding claim 26, *Stettner* discloses an image detector for detecting electromagnetic radiation comprising: a plurality of layers, each layer including at least one photosensor, wherein each of the layer and photosensor include a nonvanishing transparency to the electromagnetic radiation, and wherein the plurality of layers are

arranged one above another, such that electromagnetic radiation is passable there-through, one after another (See Generally Figs. 3(a)-3(b) and 4(a)-4(c) and col. 1, lines 51-57, col. 3, lines 55-66).

Regarding claim 27, *Stettner* discloses the imaged detector is for detecting X-ray radiation (col. 9, lines 44-50).

Regarding claim 28, *Stettner* discloses each layer includes a plurality of photosensors, arranged spatially on a respective layer, wherein the plurality of photosensors are adapted to generate electrical signals in a manner dependent on the detection of electromagnetic radiation, and wherein the plurality of photosensors are jointly electrically contact-connected at least one of individually and within individual areas, so that the electromagnetic radiation is adapted to be detected in spatially resolved fashion (See Generally Figs. 3(a)-3(b) and 4(a)-4(c) and col. 1, lines 51-57, col. 3, lines 55-66).

Regarding claim 29, *Stettner* discloses one of individual photosensors and photosensor areas of each layer are arranged at least one of congruently and in overlapping fashion at least one of above and below the at least one of individual photosensors and photosensor areas of the other layers (See Generally Figs. 3(a)-3(b) and 4(a)-4(c).

Regarding claim 30, *Stettner* discloses at least one of individual photosensors and photosensor areas of each layer are arranged randomly, so that the at least one of photosensors and photosensor areas which are arranged randomly at least one of above and below the at least one of photosensors and photosensor areas of other

layers are jointly utilizable for the spatially resolved detection of the radiation to be detected (See Generally Figs. 3(a)-3(b) and 4(a)-4(c) and col. 1, lines 51-64).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 5,10,13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Stettner et al (US 5,099,128 A)* as applied to claim 1 above, and further in view of *Yu et al (US 2002/0017612 A1).*

Regarding claim 5, Stettner discloses the use of a scintillator used as the sensor (See Generally Figs. 3(a)-3(b) and 4(a)-4(c) and col. 1, lines 51-57, col. 3, lines 55-66). Stettner does not disclose of an organic photodiode used as a photosensor. Yu discloses utilizing an organic photodiode to detect high-energy photons, electrons, x-rays and ionized particles a characteristic of x-rays, beta particles and ionized particles are characteristic of gamma radiation ([0120]). Yu teaches in addition to high photosensitivity, organic photodiodes show large dynamic range and relatively flat photosensitivity ([0013]). Therefore, it would have been obvious to modify the apparatus suggest by Stettner to utilize an organic photodiode as suggest by Yu, to allow for a more versatile apparatus.

Regarding claim 10, Stettner discloses the use of a scintillator used as the sensor (See Generally Figs. 3(a)-3(b) and 4(a)-4(c) and col. 1, lines 51-57, col. 3, lines

55-66). Stettner does not disclose of an organic photodiode used as a photosensor. Yu discloses utilizing an organic photodiode to detect high-energy photons, electrons, x-rays and ionized particles a characteristic of x-rays, beta particles and ionized particles are characteristic of gamma radiation ([0120]). Yu teaches in addition to high photosensitivity, organic photodiodes show large dynamic range and relatively flat photosensitivity ([0013]). Therefore, it would have been obvious to modify the apparatus suggest by Stettner to utilize an organic photodiode as suggest by Yu, to allow for a more versatile apparatus.

Regarding claim 13, Stettner discloses the use of a scintillator used as the sensor (See Generally Figs. 3(a)-3(b) and 4(a)-4(c) and col. 1, lines 51-57, col. 3, lines 55-66). Stettner does not disclose of an organic photodiode used as a photosensor. Yu discloses utilizing an organic photodiode to detect high-energy photons, electrons, x-rays and ionized particles a characteristic of x-rays, beta particles and ionized particles are characteristic of gamma radiation ([0120]). Yu teaches in addition to high photosensitivity, organic photodiodes show large dynamic range and relatively flat photosensitivity ([0013]). Therefore, it would have been obvious to modify the apparatus suggest by Stettner to utilize an organic photodiode as suggest by Yu, to allow for a more versatile apparatus.

Regarding claim 16, Stettner discloses the use of a scintillator used as the sensor (See Generally Figs. 3(a)-3(b) and 4(a)-4(c) and col. 1, lines 51-57, col. 3, lines 55-66). Stettner does not disclose of an organic photodiode used as a photosensor. Yu discloses utilizing an organic photodiode to detect high-energy photons, electrons, x-

rays and ionized particles a characteristic of x-rays, beta particles and ionized particles are characteristic of gamma radiation ([0120]). Yu teaches in addition to high photosensitivity, organic photodiodes show large dynamic range and relatively flat photosensitivity ([0013]). Therefore, it would have been obvious to modify the apparatus suggest by Stettner to utilize an organic photodiode as suggest by Yu, to allow for a more versatile apparatus.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Faye Polyzos whose telephone number is 571-272-2447. The examiner can normally be reached on Monday thru Friday from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FP

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PRIMARY EXAMINER
GROUP ART UNIT 2878